



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Board of Patent Appeals and Interferences

APPELLANTS: Larry A. Spino, Scott) PATENT APPLICATION
 Swanzey)
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 APPLICATION NO.: 09/610,586) Group Art Unit: 1713
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 FILED: July 5, 2000) Examiner: William K.
) Cheung
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)
)
 FOR: POLYMERIC COMPOSITION, ITS) Attorney Docket No.:
 USE FOR THE MANUFACTURE OF SV0009
 OBJECT AND OBJECT SO
 OBTAINED
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APPEAL BRIEF

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This document is an appeal from the Final Rejection dated January 13, 2003, regarding the above-mentioned case. A copy of the appealed claims is attached to this brief in Appendix A.

Real Party in Interest

The subject patent application has been assigned to Polypropylene Belgium.

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ANY ADDITIONAL FEES REQUIRED
 CHARGE TO DEPOSIT ACCOUNT
 NO. 01-0528

Related Appeals and Interferences

Appellants are not aware of any other appeals or interferences which will directly affect or be affected or have a bearing on the Board's decision in this pending appeal.

Status of Claims

Claims 1-9 remain pending and have been finally rejected by the Examiner. Claim 1 is an independent claim, and claims 2-9 depend from claim 1.

Status of Amendments

All amendments have been entered, and there are no other pending or outstanding amendments.

Summary of the Invention

The subject matter set forth in this patent application and regarded by Appellants as the invention is a polypropylene composition containing a propylene polymer, an amine oxide, and a clarifying agent. The composition is "free or essentially free of phenolic antioxidant," which means that no phenolic antioxidant is deliberately added to the instant composition in order to achieve the stabilization (see specification, page 2, lines 7-11). The composition according to the invention that gives the best results contains: a) 100 parts by weight of a propylene copolymer containing 0.1 to 5 weight % of ethylene, b) from 0.01 to 0.1 part by weight of an amine oxide of formula (I) wherein R' and R" are alkyl radicals containing 4 to 22 carbon atoms, and c) from 0.1 to 0.5 part by weight of a metallic salt of an organic phosphate (see specification, page 5, lines 25-34). The amine oxide of formula (I) can be found on page 1, lines 26-30. The composition may also contain other additives such as supplemental stabilizers or colorants (see specification, page 6, lines 1-3)

Issues

The issues presented on appeal are:

- 1) Whether Claim 3 has been properly rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention?

- 2) Whether Claims 1-2, 5-8 have been properly rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough et. al (WO 00/12605) in view of Ushioda et. al. (U.S. 6,410,662 B1)?
- 3) Whether Claim 3 has been properly rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough et. al (WO 00/12605) in view of Ushioda et. al. (U.S. 6,410,662 B1) and further in view of Masino (U.S. 5,182,341)?
- 4) Whether Claims 1 and 4 have been properly rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,238,615 B1)?
- 5) Whether Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,238,615 B1) in view of Ushioda et. al. (U.S. 6,410,662 B1)?

Grouping of Claims

Claims 1-9 of the subject patent application stand or fall together.

Argument

I. Rejection of Claim 3 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner stated that “there is a high degree of error in determining the amount of inorganic substances such as titanium in a polypropylene polymer sample” according to Example 3 in Masino (see paper #10, paragraph 6, page 3). However, Example 3 recites that the observed productivity is inconsistent with the observed high residual titanium content of the product, and is probably due to high degrees of experimental error (see Masino, column 12, lines 35-40). The term “high residual titanium content” is not quantified in Masino, and Applicant is not sure how the Examiner has considered the Applicant’s disclosure as having a “high residual titanium content.” Furthermore, Masino recites that experimental error is attributed to the observed high productivity. The high degree of experimental error is referring to the observed high productivity, and

not the titanium content. The term "experimental error" can have numerous interpretations, and all of the potential factors implemented in a given experiment should be considered.

In addition, the Applicant recites the inclusion of such inorganic residue in its Examples 1 and 2. The Examiner also stated that a person of ordinary skill in the art would not know the proper techniques for determining the amount of inorganic residue per kg of propylene polymer in order to make or use the invention of Claim 3. However, the Applicant recites that the titanium catalyst is obtained by subjecting the solid resulting from the reduction of titanium tetrachloride or titanium tetraalkoxide by an organoaluminum reducing agent to successive or combined treatments by an electron-donor compound by a halogenated compound (see specification, page 3, lines 6-10). Such catalysts are characterized most often by a content of inorganic residues, generally called ash content, of from 100 mg to 700 mg of inorganic residue per kg of propylene polymer (see specification, page 3, lines 12-15). The ash content is further defined as content of inorganic residues measured by decomposing 20 to 100 grams of resin by heating in a constant weight crucible (see specification, page 7, lines 23-27). The Applicant's specification recites the manner of making and using the invention of Claim 3 in such terms so as to enable any person skilled in the art to make and use the same. In view of the preceding, the Applicant respectfully requests the honorable Board to reverse the Examiner's rejection of Claim 3 under 35 U.S.C. §112, first paragraph.

II. Rejection of claims 1-2, 5-8 under 35 U.S.C. 103(a) as being unpatentable over McCullough et. al (WO 00/12605) in view of Ushioda et. al. (U.S. 6,410,662 B1).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991).

The composition recited by the Applicant in Claim 1 is distinguishable from the composition recited in McCullough. The Applicant's composition is free or essentially free of phenolic antioxidant (see Claim 1). In the context of this invention, the phrase "free or essentially free of phenolic antioxidant" means that no phenolic antioxidant is deliberately added to the instant composition in order to achieve stabilization (see specification, page 2, lines 7-10). By contrast, the composition in McCullough recites that "antioxidants which may be most useful in the compositions of the present invention include primary antioxidants of phenolic type" (see McCullough, page 7, par.2, lines 8-9).

The inclusion of a nucleating agent from Ushioda into the invention of McCullough does not render Applicant's claims obvious over the combination of the cited references. The suggestion to combine the reference teachings does not lead to a reasonable expectation of success. Imparting the teachings from Ushioda of utilizing a nucleating agent into McCullough is improper here because the invention recited in McCullough, as stated above, is distinguishable from the Applicant's claimed invention. Examples 4-6 of McCullough recite the inclusion of the antioxidant tris (2,4-di-tert-butylphenyl) phosphite, clearly indicating that this antioxidant does contain a phenyl group. Teaching the inclusion of a nucleating agent into a composition that is different from the Applicant's claimed composition does not render the Applicant's claimed invention obvious. The Applicant respectfully requests the honorable Board to reverse the Examiner's rejection of Claims 1-2, 5-8 under 35 U.S.C. §103(a).

III. Rejection of claim 3 under 35 U.S.C. 103(a) as being unpatentable over McCullough et. al (WO 00/12605) in view of Ushioda et. al. (U.S. 6,410,662 B1) and further in view of Masino (U.S. 5,182,341).

The combination of the teachings from Ushioda and McCullough, namely imparting the teachings of using nucleating agents, has already been discussed above in the Argument above. As for the teachings of Masino, the Examiner stated that since Masino indicates that the preparation of a high melt flow polypropylene requires an amount of inorganic catalyst materials for carrying out the polymerization process, Masino clearly indicates that a propylene polymer such as the high melt flow polypropylene of McCullough would also contain a specific amount of inorganic residue (see paper #5, paragraph 9, page 9). However, the Applicant's claimed invention does not include a recitation of a high melt flow polypropylene with a specific melt flow as in Claim 1 of McCullough. In

addition, McCullough does not recite a clarifying agent as part of its composition. Furthermore, as stated in the Argument above, the composition claimed in McCullough is distinguishable from that of the Applicant's invention. The combination of the above-mentioned references does not teach nor suggest the claim limitations of the Applicant's invention. The Examiner also stated that since the Applicants' specification does not indicate the criticality of the claimed inorganic residue range, the rejection set forth is proper (see paper #10, paragraph 9, page 7). However, the Applicant recites Examples 1 and 2 which disclose propylene polymers with specific inorganic residue (ash) content, whose content is measured by decomposing 20 to 100 grams of resin by heating in a constant weight crucible (see specification, page 7, lines 23-27). Furthermore, the specification need not necessarily disclose proportions or ranges in a composition claim as critical in order for them to be considered as such, Jennings v. Brenner, Comr. Pats. (DCDC 1966), 555 F. Supp. 410, 150 USPQ 167; Scandiamant Aktiebolag v. Comr. Pats., (CADC 1974), 509 F.2d 463, 184 USPQ 201; In re Saunders et al. (CCPA 1971) 444 F.2d 599, 170 USPQ 213. Thus, the Applicant respectfully requests the honorable Board to reverse the Examiner's rejection of Claim 3 under 35 U.S.C. §103(a).

IV. Rejection of claims 1 and 4 under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,238,615 B1).

The Examiner states that Kobayashi does not suggest that one of ordinary skill in the art must use a stabilizer, especially pertaining to a phenolic antioxidant, and that it would have been obvious to one of ordinary skill in the art that a phenolic antioxidant is not a critical component (see paper #10, paragraph 10, page 8). However, Kobayashi recites that the present invention may contain other additives such as stabilizers, neutralizing agents, antistatic agents, lubricants, etc...and that these known additives may be used in combination, insofar as they do not adversely affect the effects of the invention (see column 11, lines 66-68; column 7, lines 1-3). Since Kobayashi does disclose the use of phenolic antioxidant in its Example 1, then the use of such would not negatively impact the effects of the invention, according to the specification language cited above. In addition, Examples 2 through 6 are also prepared using the procedure in Example 1. In all of the examples in Kobayashi, the inclusion of a phenolic antioxidant is a critical component. By contrast, the Applicant's invention recites a composition free or essentially free of phenolic antioxidant (see specification,

page 2, lines 7-10). The Applicant's invention recites the propriety of deliberately not using such phenolic antioxidants. Thus, it would not have been obvious to one of ordinary skill in the art to use all the teachings in Kobayashi to obtain the invention of claim 1 and 4. The Applicant respectfully requests the honorable Board to reverse the Examiner's rejection of Claims 1 and 4 under 35 U.S.C. §103(a).

V. Rejection of Claim 9 under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,238,615 B1) in view of Ushioda et. al. (U.S. 6,410,662 B1).

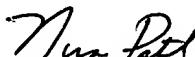
Replacing Kobayashi's sorbitol based nucleating agent with Ushioda's phosphate based nucleating agent still would not overcome the criticality of having a phenolic antioxidant in the composition, as stated in the Argument above. Thus, replacing nucleating agents would not overcome the importance of having a phenolic antioxidant in Kobayashi. The Applicant respectfully requests the honorable Board to reverse the Examiner's rejection of Claims 9 under 35 U.S.C. §103(a).

Conclusion

For the reasons stated above, the Appellants submit that all claims now presented are in a condition for allowance, and respectfully requests the honorable Board to reverse the Examiner's final rejection of these claims.

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Respectfully submitted,



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APPENDIX A

1. A composition, free or essentially free of phenolic antioxidant, containing

- a) 100 parts by weight of a propylene polymer,
- b) from 0.005 to 0.1 part by weight of an amine oxide having the structural formula



wherein R' and R'' are groups containing from 1 to 36 carbon atoms, or of a N,N-dialkylhydroxylamine of a formula



wherein R¹ and R² are independent groups of 1 to 36 carbon atoms,

- c) from 0.1 to 0.5 part by weight of a clarifying agent.

2. Composition according to claim 1, wherein the propylene polymer is a random copolymer containing 0.1 to 5 % by weight of ethylene.

3. Composition according to claim 1, wherein the propylene polymer contains from 100 mg to 500 mg of inorganic residue per kg of propylene polymer.

4. Composition according to claim 1, containing from 0.005 to 0.1 part by weight of an amine oxide of formula (I) wherein R' and R" are linear or substituted alkyl groups containing 4 to 22 carbon atoms.

5. Composition according to claim 1, containing from 0.005 to 0.1 part of a N,N-dialkylhydroxylamine of formula (II) wherein R¹ and R² contain from 14 to 22 carbon atoms.

6. Composition according to claim 1, wherein the clarifying agent is chosen from benzilidene sorbitol compounds, metallic salt of organic phosphate or metal salts of rosin.

7. Composition according to claim 6, wherein the clarifying agent is the aluminium hydroxy-bis(2,2'-methylene-bis[4,6-di(tert-butyl)phenyl] phosphate.

8. Composition according to claim 1, containing further from 0.01 to 0.1 part by weight of a sterically hindered amine.

9. Composition according to claim 1 containing:

a) 100 parts by weight of a propylene copolymer containing 0.1 to 5 weight % of ethylene,

b) from 0.01 to 0.1 part by weight of an amine oxide of formula (I) wherein R' and R" are alkyl radicals containing 4 to 22 carbon atoms, and

c) from 0.1 to 0.5 parts by weight of a metallic salt of organic phosphate.